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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,942	12/24/2003	Satoru Komatsu	107355-00102	9576

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EXAMINER

AL NAZER, LEITH A

ART UNIT PAPER NUMBER

2821

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/743,942	Applicant(s) KOMATSU ET AL.	
	Examiner Leith A. Al-Nazer	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/24/03, 04/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites "...the one pair of two corner portions". There is a lack of antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,097,345 to Walton in view of Wen-Shyang et al.

With respect to claim 1, Walton teaches an on-board antenna comprising a radiation element (28) provided on a dielectric substrate (12); and a grounding conductor (18) surrounding a periphery of an outer edge portion of the radiation element at a position spaced away outwardly from the outer edge portion. Claim 1 requires the radiation element have an inner cut-out portion so that the surface of the dielectric substrate is exposed therethrough. Wen-Shyang teaches such a configuration (figure 1). At the time of the invention, it would have been obvious to one having ordinary skill in the art to include Wen-Shyang's radiation element in the system of Walton. The motivation for doing so would have been to provide a radiation element with desired properties, such as a specific radiation pattern.

With respect to claim 3, Walton teaches the radiation element having a circular shape and having a predetermined width (figures 2, 3, and 4).

With respect to claim 4, Wen-Shyang teaches an inner edge portion of the inner cut-out portion following an outer edge portion of the radiation element at a position spaced away inwardly a predetermined widthwise distance from the outer edge portion of the radiation element (figure 1).

Claim 5 requires an external size of the on-board antenna with the inner cut-out portion be smaller than that of an on-board antenna without the inner cut-out portion.

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As outlined in the rejection of claim 1 above, Walton and Wen-Shyang, in combination, disclose all of the elements recited in claim 1. Claim 5 fails to add any further structure. Therefore, inherently, the combination of Walton and Wen-Shyang would be capable of producing an on-board antenna wherein an external size of the on-board antenna with the inner cut-out portion is smaller than that of an on-board antenna without the inner cut-out portion.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,097,345 to Walton in view of Wen-Shyang et al as applied to claims 1 and 3-5 above, and further in view of U.S. Patent No. 6,188,368 to Koriyama et al.

Claim 6 requires the radiation element be a semiconductor. It is well known in the art that semiconductor materials can be used as radiating elements, as is evidenced by Koriyama. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to utilize a semiconductor radiating element in the system of Walton or Wen-Shyang. The motivation for doing so would have been to provide an element with desired radiation properties, as is suggested by Koriyama (column 1, lines 18-26).

Allowable Subject Matter

7. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Dependent claim 2 recites the radiation element being a substantially quadrangular film having two pairs of two opposing corner portions, and the one pair of two corner portions being cut so as to form substantially linear perturbative portions. The prior art of record fails to teach or suggest such a radiation element. Therefore, claim 2 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of base claim 1.

Citation of Pertinent References

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent documents further show the state of the art with respect to vehicular and slot antennas:

- a. U.S. Patent Application Publication No. 2004/0164916 to Jecko et al.
- b. U.S. Patent Application Publication No. 2001/0050651 to Grangeat et al.
- c. U.S. Patent No. 6,448,935 to Fuchs et al.
- d. U.S. Patent No. 6,329,950 to Harrell et al.
- e. U.S. Patent No. 6,246,377 to Aiello et al.
- f. U.S. Patent No. 5,905,471 to Biebl et al.
- g. U.S. Patent No. 5,629,712 to Adrian et al.

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- h. U.S. Patent No. 5,621,419 to Meek et al.
- i. U.S. Patent No. 5,568,159 to Pelton et al.
- j. U.S. Patent No. 4,682,180 to Gans

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A. Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**THO PHAN
PRIMARY EXAMINER**